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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,428	11/13/2001	Narasimharao Dontula	82859LMB	3028

7590

09/04/2003

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EXAMINER

WYROZEBSKI LEE, KATARZYNA I

ART UNIT

PAPER NUMBER

1714

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p align="center">10/008,428</p>	<p>Applicant(s)</p> <p align="center">DONTULA ET AL.</p>	
	<p>Examiner</p> <p align="center">Katarzyna Wyrozebski Lee</p>	<p>Art Unit</p> <p align="center">1714</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36-46 is/are allowed.
- 6) ☒ Claim(s) 1-28 and 33 is/are rejected.
- 7) ☒ Claim(s) 29-32, 34 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0603</u> . | 6) <input type="checkbox"/> Other: |

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-5, 11, 13-18, 24, 26-28, 30, 36 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7, 12-14, 29, 30, 33-37, 41-43, 45-51 of copending Application No. 10/008,810 ('810). Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following explanation.

The co-pending application discloses composition comprising block copolymer intercalated between clay platelets.

Block copolymer of '810 comprises clay-compatible block that is hydrophilic and polymer-compatible that is hydrophobic and does not intercalate in-between the clay platelets.

The clay utilized is synthetic smectite clay such as montmorillonite. Smectite clays have 2:1 layered structure, wherein the two octahedral layers contain -OH groups.

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In the light of the above disclosure, it would have been obvious to one having ordinary skill in the art at the time of the instant invention one of ordinary skill in the art, where utilizing PEO/PA block copolymer in the present invention would arrive at the claims of co-pending '810 application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 8, 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 8 and 21 contain limitation of "derivative" which renders the above claims indefinite. It is not clear as to what exactly are the polymers being claimed.

Claim 21 is rendered as indefinite claims since it contains an improper Markush language. According to MPEP 2173.05(h) the Markush language may recite for example:

"...wherein R is selected from the group consisting of A, B, C and D" or "...wherein R is A, B, C or D".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-7, 9-28, 30, 33 are rejected under 35 U.S.C. 102(e) as being anticipated by FISHER (US 6,579,927).

The prior art of FISHER discloses composition for nanocomposite material comprising block copolymer, clay and matrix copolymer.

The block copolymer of FISHER has block (A) compatible with the clay component and block (B) compatible with the matrix resin. According to specification of FISHER, block (A) is of hydrophilic nature and it includes polyethylene oxide, polyvinyl pyrrolidone, polyvinyl alcohol, polymethacrylamides, polysaccharides and the like (col. 3, lines 40-55). Number average molecular weight of the hydrophilic segment is in a range of 100-5,000 (claim 9).

Structural unit (B) is compatible with matrix polymer and can have the same monomers as the matrix polymer (col. 3, lines 61-66). Specification (col. 4, lines 10-15) discloses polyamides, polycaprolactone, polyester and polystyrene as species of structural unit (B). The number average molecular weight of the hydrophobic segment would then be 100-20,000 (claim 9).

Examples of FISHER teach use of block copolymers of PVP and PS (example II), and PEO and PS (example I), which are embodiments required by the present invention.

The hydrophilic segment of the block or graft co-polymer of the prior art of FISHER has at least 2 monomeric units and hydrophobic segment has the same or larger amount of monomers as polyether segment. Specification further discloses that the segment (A) contains 5-20 monomeric units (col. 3, lines 56-60). Therefore the ratio between polyether segment and polyamide segment is in a range of 1:1 - 95:1 to 1:1 - 1:95.

The matrix polymer of the prior art of FISHER is selected from polyesters such as polyethylene terephthalate, polyamides, polyolefins such as polyethylene or polypropylene and the like (col. 3, lines 11-25), examples further teach polystyrene.

Clay component of the prior art of FISHER is smectite clay either natural or synthetic and it is selected from clays such as montmorillonite (col. 2, lines 42-54). Clay is utilized in an amount ratio of 0.01-1 to 100:1 with the block copolymer. The ratio of clay to matrix polymer is 1:200 to 2:1 (col. 4, lines 30-34). Based on the ratios depicted by the prior art of FISHER, the amount of matrix polymer is at least 50%.

In the process of the prior art of FISHER the clay component is first modified with block copolymer and mixed with suitable matrix polymer to form nanocomposite. Intercalation of the block component between the clay platelet is a well-known process, which occurs in this type of reaction and upon shearing action with matrix polymer such clay can further exfoliate (col. 4, lines 45-59). The examples further teach exfoliation, which further means that the clay had to be also intercalated beforehand.

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In the light of the above disclosure, the prior art of FISHER anticipates requirements of the claims rejected above.

Allowable Subject Matter

7. Claims 29-32, 34 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 29-32, 34 and 35 require that the block polymer had three segments. Such limitations are neither taught nor suggested by the prior art of FISHER.

8. Claims 36-46 are allowed. In the instant case the prior art searched and found relevant discloses articles such as films and packaging. There is no teaching or suggestion that would render it obvious to utilize such composition as imaging member.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katarzyna Wyrozebski Lee whose telephone number is (703) 306-5875. The examiner can normally be reached on Mon-Thurs 6:30 AM-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (703) 306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Katarzyna Wyposebski
KIWL

August 28, 2003